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J1051 U.S. PTO
03/06/02

CERTIFICATE OF MAILING BY EXPRESS MAIL

EXPRESS MAIL NO. EL467978240US

I, David Hernandez, hereby certify that the below identified application and attached documents, pursuant to 37 C.F.R. §1.10, are being deposited as "Express Mail" this date with the United States Postal service in an envelope addressed to Box PATENT APPLICATION, Commissioner for Patents, Washington, D.C. 20231, on

Date: 3/6/02

By [Signature]
Signature of person depositing Express Mail

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

DIVISIONAL FILING PURSUANT TO 37 C.F.R. §1.53(b)(1)

Docket No.: 50847.00114

Box PATENT APPLICATION
Commissioner for Patents
Washington, D.C. 20231

Commissioner:

Herewith is the divisional patent application of Applicant: Frazier, et al.

TITLE: CLOSE/INTRA-FORMATION POSITIONING COLLISION
AVOIDANCE SYSTEM AND METHOD

Which is a: ☐ Continuation ☒ Divisional of U.S. patent application no. 09/223,533,
filed December 30, 1998.

Including a copy of the prior application as filed, consisting of:

- ☒ Abstract
- 41 Pages of Specification (Only specification and claims)
- 37 Numbered claim(s)
- 10 Sheets of drawing: ☐ informal ☒ formal

The undersigned hereby verifies that the foregoing papers are a true copy of what is shown in our records to be the above identified prior application, including the oath or declaration originally filed.

Small entity status:

☐ Applicant asserts "small entity" status under 37 C.F.R. §1.9 and 1.27.

J1046 U.S. PTO
10/091818
03/06/02

10091818-030602

Assignment:

- ☒ The current application is assigned to L-3 Communications Corporation The assignment has been recorded at Reel 011847, Frame 0636.

Amendments:

- ☒ Request for Entry of Substitute Specification Under 37 C.F.R. § 1.125
☒ Substitute Specification and Version with Markings to Show Changes Made

Other Enclosures:

- ☒ Copy of executed Declaration and Oath Filed in parent application no. 09/223,533
☒ Information Disclosure Statement/PTO Form 1449
☒ Abstract

**IS BASED ON CLAIMS AS FILED
LESS ANY ABOVE CANCELED
Per MPEP §§506 AND 607**

	Claims filed		Basic claims		Present Extra			Fees
Basic Fee:								\$710.00
Total Effective Claims	15	minus	20	=	0	x	\$ 18.00	= \$.00
Independent Claims	1	minus	3	=	0	x	\$ 80.00	= .00
							Subtotal	= \$710.00
If "small entity" status box above is checked, enter half (1/2) of Subtotal and subtract								
							TOTAL FILING FEE	= \$710.00
If "assignment" box is checked, add recording fee:						+	\$ 40.00	
If "37 C.F.R. §1.47" box above is checked, add Petition fee (per 37 C.F.R. §1.17(h)):						+	\$130.00	
							TOTAL FEE ENCLOSED	= \$710.00

Manner of Payment:

☐ Please charge Deposit Account No. 19-3878 in the amount of \$_____. A duplicate copy of this sheet is attached.

☒ A Squire, Sanders & Dempsey L.L.P. check in the amount of \$710.00 is attached.

This statement does NOT authorize charge of the issue fee. The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any deficiency in the fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under 37 C.F.R. §§1.16-1.18 (deficiency only) now or hereafter relative to this Application and the resulting Official document under 37 C.F.R. §1.20, or credit any overpayment to Account No. 19-3878 for which purpose a duplicate copy of this sheet is attached.

Respectfully submitted,

By William R. Bachand

William R. Bachand

Reg. No. 34,980

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**IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE**

Applicant(s):	Frazier, et al	Docket No.:	50847.00114
Application No.:	Not Yet Assigned	Group Art Unit:	Not Yet Assigned
Filing Date:	March 6, 2002	Examiner:	Not Yet Assigned
TITLE	CLOSE/INTRA-FORMATION POSITIONING COLLISION AVOIDANCE SYSTEM AND METHOD		

REQUEST FOR ENTRY OF SUBSTITUTE SPECIFICATION
UNDER 37 C.F.R. § 1.125

Commissioner for Patents
Washington, DC 20231

Commissioner:

The captioned application is a divisional application of and claims priority to U.S. Patent Application Serial No. 09/223,533, filed December 30, 1998 with claims 1-37. In the prosecution of the parent application, claims 14-29 were cancelled in light of a restriction requirement imposed by the Examiner.

Prior to examination please enter the enclosed substitute specification prepared for publication. The substitute specification differs from the originally filed parent application as shown in the enclosed marked-up version showing changes made. In the substitute specification, claims 1-37 of the parent are cancelled and claims 38-52 are newly presented here. A replacement abstract is enclosed. New claims are submitted to more particularly point out and distinctly claim the invention for which protection is sought. No new matter is submitted.

The Examiner is invited to telephone me at the telephone number listed below if it would in any way advance prosecution of this case.

Respectfully submitted,

March 6, 2002
Date

William R. Bachand
William. R. Bachand
Reg. No. 34,980

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT

The abstract of the parent application is revised as follows:

A [passive Traffic Alert and Collision Avoidance System (TCAS)] collision avoidance system and method is based on receiving and processing Mode-S transponder messages without [the TCAS computer having to interrogate] interrogating the transponders of the respective aircraft flying in formation. [(i.e., a passive TCAS).] A [TCAS] collision avoidance computer and Mode-S transponder are used to provide distributed intra-formation control among multiple cells of aircraft flying in formation or close-in. The Mode-S transponder provides ADS-B Global Positioning System (GPS) squitter data to the [TCAS] computer. [; the TCAS computer receives and processes the data without having to interrogate the transponders of the multiple cells of aircraft.] A mission computer is coupled to the collision avoidance computer. The mission computer may provide steering commands transmitted to other formation member aircraft. The method and system allow a safe separation between 2 to 250 aircraft flying in formation at selectable ranges.

IN THE SPECIFICATION

Line numbering was deleted, page headers and footers were revised to reflect the attorney docket number of this divisional application, paragraph numbering was added, roman numerals in the section headings were deleted, and a reference on the title page to the parent Express Mail No. EL013383723US was deleted.

Paragraph [0001] starting on page 1, line 4 of the parent application as originally filed is revised as follows:

[0001] This application is related to [co-pending application] U.S. Pat. Application SN 09/223,339, filed on [even date herewith] December 30, 1998, entitled "Vertical Speed

Indicator/Traffic Resolution Advisory Display For TCAS[.],” now U.S. Patent 6, 271,768. This application is a divisional application of U.S. Patent Application SN 09/223,533, filed on December 30, 1998.

Paragraph [0058] starting on page 22, line 24 of the parent application as originally filed is revised as follows:

[0058] The Control Display Units (CDUs) 540 are interfaces used by an operator to input flight parameters into the FMS 565. The FMS 565 is a conventional aircraft flight management system that provides flight plan routes, and lateral and vertical guidance [alone] along those routes. The FMS 565 receives control data from the IFPCAS Controller 555 to accomplish coordinated flight plan route changes among all aircraft within the intra-formation.

IN THE CLAIMS

Claims 1-37 are cancelled. New claims 38-52 are submitted.

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